

Chapter 6 Comparative Analysis

6.1 Comparative Analysis

This section compares the various alternatives in terms of their performance with respect to the performance measures established for the project. Those measures were divided into four broad areas:

- Mobility
- Operating Efficiency/Cost-Effectiveness
- Environmental Impacts
- Land Use Impacts

The previous section of the report dealt extensively with the environmental and land use impacts of the alternatives, and also discussed a number of the mobility measures, such as accessibility to employment centers and residences of low-income and elderly populations. The following sections address mobility and cost performance of the alternatives.

6.2 Mobility

The transportation model used for the project developed a number of measures of effectiveness for the alternatives. The performance of each alternative in these areas was presented in Chapter 4. A comparison of the alternatives helps point up the impacts, strength and weaknesses of the various alternatives. The No-Build Alternative serves as the “base case” against which to compare the alternatives. The 2000 existing conditions are provided, as well, to provide an additional basis of familiarity against which to evaluate the alternatives’ performance.

Modeling data is not provided for the Transportation Systems Management Alternative. In general, the transportation performance of that alternative will resemble that of the No-Build Alternative. The improvements brought about by the TSM Alternative are localized improvements in the performance of the highway and bus system, and difficult to reflect in a regional model. Improvements for this alternative will be in the capacity of the roadway to handle the traffic, and an expansion of transit options, and will not significantly alter the number of trips or the mode split.

The transportation model produced data at two geographic levels—the county and the corridor. Both sets of data are provided in this discussion, because of frequent differences in the transportation performance of the two areas.

6.2.1 Congestion and Delay

Congestion and delay are traffic issues of immediate concern to individuals and the extent to which an alternative is able to alleviate these problems is important. The two measures that most clearly indicate the alternatives’ performance in this area are average travel speed and the

percent of peak hour vehicle miles traveled in congested conditions. The county-level performance of the alternatives is presented in Table 6-1

Table 6-1 – 2025 Travel and Delay – Countywide

Measure	2000	No-Build	Bus	Hwy	Rail 1 Hour	Rail ½ Hour
VMT	3,885,952	5,874,810	5,874,372	5,939,362	5,874,693	5,867,410
Av. speed (mph)	33.69	26.8	26.75	28.1	26.81	26.9
% peak hr VMT congested	5.5%	25.8%	26.0%	24.8%	26.3%	26.0%

An enormous jump in vehicle miles of travel is projected between 2000 and 2025, with a decline in travel speed and an increase in congestion. The Highway Alternative continues this escalation of VMT. The other alternatives are projected to reduce VMT slightly. The increase and reductions brought about by the alternatives are less than 1% of total vehicle miles.

None of the alternatives is projected to bring about a significant reduction in congestion or increase in travel speeds. The Highway Alternative has the best impact in that area, but the increase in travel speed is 1.3 miles per hour and the reduction in congested VMT is similarly small. The transit alternatives (bus and Rail) are projected to result in a minimal increase in peak hour congestion.

Corridor-level congestion and delay follows similar patterns, as seen in Table 6-2.

Table 6-2 - 2025 Travel and Delay - Corridor

Measure	2000	No-Build	Bus	Hwy	Rail 1 Hour	Rail ½ Hour
VMT	673,104	922,287	923,421	994,996	923,590	920,797
Av. Speed (mph)	15.59	8.54	9.55	10.79	9.59	9.64
% peak hr VMT congested	9.7%	35.9%	32.2%	29.9%	32.7%	32.1%

However, conditions in the corridor are already more congested than the county as a whole. Travel speeds in the corridor are less than half those countywide, and the congestion is nearly double. The magnitude of change projected by 2025 is less in the corridor, with the exception of the decline in travel speeds.

All of the alternatives generate a significant increase in VMT over the No-Build Alternative. The greatest increase is attributable to the Highway Alternative, which induces longer trips. This alternative is projected to increase VMT 8% over the No-Build Alternative.

Within the corridor, all of the alternatives are projected to improve both travel speeds and congestion. The greatest improvement in each case is attributable to the Highway Alternative. This is because that alternative provides new high-speed auto capacity in the corridor.

6.2.2 Expanded Modal Options

An additional measure of mobility is the expansion of transportation options. The previous section discussed this issue from the perspective of increase accessibility due to the proximity of transportation modes to dense groupings of residences and employment sites. Two other considerations are presented here. First, the performance of a given alternative in offering new transportation modes, and second, the performance in terms of the use of non-auto modes.

All of the alternatives with the exception of the No-Build Alternative offer expanded bus service in the corridor, through additional routes and more frequent service on the linehaul bus route in the corridor (#2-Essex). The Express Bus and Commuter Rail Alternatives further expand the transportation mode accessibility. The alternatives' performance in this area is summarized in Table 6-3.

Table 6-3 - Expansion of Mode Choice Options

No-Build	TSM	Bus	Hwy	Rail 1 Hour	Rail ½ Hour
NA	Good	Excellent	Fair	Excellent	Excellent

The Express Bus Alternative increases mode choice options by extending bus service into areas which are not currently served. In addition, this alternative provides for bus connections to park-and-ride lots along VT 289 in Essex, extending the option of transit use to residents beyond that area who wish to drive and take an express bus to their destinations. The addition of express service also increases transportation options over slower, less frequent linehaul service.

The Rail Alternative introduces a new mode into the Burlington-Essex corridor. In addition, the alternative extends transit options to areas not currently served, through feeder bus routes.

Addition of mode choice should impact the distribution of trips among the transportation modes, known as mode share. Within Chittenden County, the auto is the dominant form of transportation. Transit use accounts for less than 1% of trips. Pedestrian trips far outnumber transit trips, and constitute about 4% of trips. The alternatives studied had varying impacts on the mode share of regional trips, as shown in Table 6-4.

Table 6-4 - 2025 Daily Person-Trips by Mode - Countywide

Mode	2000	No-Build	Bus	Hwy	Rail 1 Hour	Rail ½ Hour
Auto	641,895	1,028,064	1,027,020	1,025,937	1,025,966	1,023,267
Walk	28,240	42,522	42,976	42,030	42,394	41,931
Transit	5,553	8,981	9,352	9,179	10,356	11,375
Rail	150	1,169	1,232	1,232	3,792	4,574
Bus	5,403	7,812	8,120	7,947	6,564	6,801
Transit mode share	0.82%	0.83%	0.86%	0.85%	0.96%	1.05%

Trips by all modes are projected to rise significantly by 2025. The transit mode share will increase very slightly. The auto mode share will rise, and the walk mode share will decline. The number of transit trips will increase under all alternatives, including the No-Build. Rail trips, in particular, will increase enormously even under the No-Build, Bus and Highway Alternatives, which assume no increase in rail service in the county. This is because the rail ridership figures provided for 2000 are based on the number of daily riders on the Champlain Flyer in March 2001, just three months after the service began operation. The ridership projections for the alternatives assume healthy growth in ridership between 2001 and 2025. Strong ridership growth in the early years of operation of a new rail facility is the general experience for U.S transit operators.

Although transit mode share rises for all of the alternatives, the largest growth is seen for the two rail alternatives, with the half-hourly service generating the most riders. This is the only alternative for which transit mode share in the county rises above 1%.

Transit use is higher in the Burlington-Essex corridor than it is in the county as a whole. The alternatives will generate the most transit options for corridor trips, with the results as shown in Table 6-5.

Table 6-5 - 2025 Daily Person-Trips by Mode - Trips with One End in Corridor

Mode	2000	No-Build	Bus	Hwy	Rail 1 Hour	Rail ½ Hour
Auto	266,089	453,715	462,497	455,981	451,068	450,874
Walk	16,870	18,843	18,977	18,770	18,950	18,557
Transit	2,432	5,579	5,937	5,755	6,788	7,505
Rail	-	367	445	403	2,536	3,161
Bus	2,432	5,212	5,492	5,352	4,252	4,344
Transit mode share	0.85%	1.17%	1.22%	1.19%	1.42%	1.57%

Transit use and mode share are projected to increase for all of the alternatives, including No-Build. Few corridor trips are projected on rail under the No-Build, Bus and Highway Alternatives, because rail service in the corridor would be limited to Union Station in Burlington. The Bus Alternative increases the number of such trips, due to the more frequent and faster bus connection available.

The greatest increase in transit use is projected for the Rail Alternative, with the half-hourly-service alternative generating more ridership. Transit mode share is projected to reach 1.57% under this alternative.

6.2.3 Transportation Connectivity

The utility of a transportation network increases, and mobility improves, as the network expands to connect with larger transportation networks. Transportation connectivity for the Burlington-Essex corridor can be evaluated with respect to connections within the corridor, and also connections to the county, state and greater regional networks.

Although not evaluated for its benefits in this area, the No-Build Alternative increases regional connectivity through addition of connections on VT 289 and the Southern Connector. The TSM Alternative has no additional impact on connectivity, nor does the Bus Alternative, as neither entails any significant change in the transportation network over the No-Build Alternative. The Highway and Rail Alternatives both increase connectivity. See Table 6-6 below.

Table 6-6 - Transportation Connectivity Impacts

Impact Area	No-Build	TSM	Bus	Hwy	Rail 1 Hour	Rail ½ Hour
State/National	NA	None	None	Fair	Excellent	Excellent
County	NA	None	None	Good	Excellent	Excellent
Corridor	NA	None	None	Excellent	Excellent	Excellent

The Highway Alternative provides several new roadway connections within the corridor. In addition, the Circumferential Highway provides a high-speed, high-capacity facility linking the two ends of the corridor. The Circumferential Highway will also provide connections for areas outside the corridor into the corridor, around the metropolitan area, and to central Burlington.

The Rail Alternative provides rail connection for travel within the county, by extending the Champlain Flyer into the Burlington-Essex corridor. It also provides a link between two current rail services, Amtrak in Essex Junction and the Champlain Flyer. The Amtrak service is of regional significance, and could become an international route, if plans to provide high speed rail to Montreal progress. The Burlington-Essex rail corridor is also key to linking new services being developed in other areas of the state, notably to St. Albans and Vergennes/Middlebury. The Rail Alternative also provides connectivity for freight service, as an upgraded line would encourage its use.

6.3 Operating Efficiencies/Cost-Effectiveness

The alternatives' operating efficiency grows out of their contributions to mobility. This analysis looks further at their impacts on safety and on local streets.

6.3.1 Safety

The potential of the alternatives to affect safety in the corridor is summarized in Table 6-7.

Table 6-7 - Safety Impacts

No-Build	TSM	Bus	Hwy	Rail-hourly	Rail-1/2 hourly
O	+	O	-	-	-

Key: - negative impact, O neutral impact, + positive impact

The Burlington-Essex corridor contains many of the high accident locations in Chittenden County. Those locations are the larger intersections along VT 15 between the VT 15/U.S.

2/U.S. 7 intersection in Winooski and Five Corners, and extend to the intersection of VT 117 and Sand Hill Road at the eastern edge of the corridor.

These locations are the sites of a higher than average number of accidents because of the volume of traffic flowing through them and, perhaps in some cases, because of their design. Assuming no changes in the configuration of the intersections, the number of accidents at these locations is likely to increase by 2025, due to the large increase in traffic projected for the corridor. The No-Build Alternative includes no provision for improvements at these locations. Of the other alternatives evaluated, only the TSM Alternative is likely to improve safety in the VT 15 corridor. This alternative includes specific provision for improving the traffic operations at all of the high-accident intersections from Five Corners to U.S. 2/U.S. 7. While these improvements will not reduce the volume of traffic at these locations, they will improve operations and reduce conflicting movements.

In addition to geometric and signal improvements at the intersections, the primary means of improving safety is to reduce the volume of traffic. Based on the projected number of trips in the corridor and VMT in the corridor, there is very little variation among the alternatives, and all of the alternatives would result in more traffic at these locations than currently. The Highway Alternative, in particular, would increase traffic volumes and complicate traffic movements significantly at the VT 15/I-89 interchange, and would increase traffic volumes at Five Corners. The Bus and Rail Alternatives do not significantly reduce traffic volumes in the corridor.

The Rail Alternative has the potential to increase conflicts between trains and other transportation modes, with an impact on safety. The Rail Alternative includes provisions for upgrade of warning signals and other safety equipment at grade crossings. The fact remains that introduction of trains to the corridor would increase the risk of accidents between trains and autos, pedestrians and bicyclists.

The safety of pedestrians and bicyclists needs to be considered for the other modes, as well. Increases in traffic in the corridor, as projected in 2025, will increase the hazards for people using these modes in the corridor. As the preferred alternative is refined in the next phase of the project, access for these modes will need to be given a high priority.

6.3.2 Impacts on Neighborhood Streets

As highways and arterial streets become congested, local streets are used as shortcuts and bypasses around the congestion. This is already the case at several locations in the Burlington-Essex corridor. Conditions are projected to worsen between now and 2025. Highway VMT in the corridor is projected to increase 50% during this period, while VMT on arterials is projected to rise 29% and VMT on connector and local streets is projected to rise 42%.

As part of the travel demand modeling for the project, an assessment was done of the likelihood of the various alternatives to redistribute traffic among the different roadway classifications (highways, arterials, and local and collector streets) within the corridor. The model projected VMT by roadway classification. With one exception, there was very little variation among the alternatives. VMT remained virtually constant for all classifications among the alternatives. The exception was the Highway Alternative. The model projected an 8% increase in VMT *for trips within the corridor* under the Highway Alternative. Traffic on arterials and local streets remained constant, and nearly the entire increase in VMT for this alternative was projected to use highways. This is consistent with the introduction of the Circumferential Highway under this

alternative. Interestingly, the model projected no meaningful decline in traffic on the arterials and local streets under this alternative; VMT remained constant. This alternative also had very little impact on countywide VMT.

This evaluation process looked at impacts on local streets in general, but did not address specific locations. It is possible that the Rail Alternative would entail additional traffic on local streets around station locations. This would require further evaluation in the next phase of study, based on a refinement of station locations.

The impact of the alternatives on different classifications of roads within the corridor is shown in Table 6-8.

Table 6-8 – Comparison of VMT by Road Class by Alternative

Road Class	No-Build	Bus	Highway	Rail 1 Hour	Rail ½ Hour
Highways	260,322	261,196	353,512	261,734	261,242
Arterials	500,292	499,999	485,111	500,089	498,067
Collectors/ Local	161,673	162,226	156,373	161,787	161,489
Total	922,287	923,421	994,996	923,590	920,797

6.3.3 Costs

There is a wide variation in the projected operating and capital costs for the alternatives. Costs are summarized in Table 6-9.

Table 6-9 - Costs of Alternatives

Cost Type	No-Build	TSM	Bus	Hwy	Rail 1 Hour	Rail ½ Hour
Capital	NA	\$1,805,000	\$5,435,400	\$70,455,000	\$26,600,000	\$67,900,000
Operating	NA	\$516,865	\$1,447,685	\$671,230	\$1,917,665	\$3,364,465

By definition, the TSM Alternative is an alternative with low capital costs. The primary cost of this alternative is the purchase of buses for the additional bus service. Remaining costs are associated with intersection improvements. The operating costs are for operating the bus service.

The cost of additional bus service is a key factor in the operating costs for the TSM, Bus and Highway Alternatives. All of these alternatives also include costs for the purchase of buses. The cost of transit operations for all of the alternatives is significant, and will need to be addressed as work progresses on the project.

The capital costs for the Bus Alternative are for the purchase of 17 additional buses, as well as construction of park-and-ride lots and substantial passenger waiting areas at the park-and-rides

and 12 other locations. Operating costs are fairly high for this alternative, as frequent bus service is included, and several new routes.

The Highway Alternatives is the most expensive, in terms of capital costs. It includes construction of a new road and interchange, as well as the Circumferential Highway. Costs for the Circumferential Highway segments included in this alternative total \$63,500,000. These costs were developed by VTrans as part of the agency's planning and design process for the project. Operating costs include maintenance costs for the new road facilities, as well as expanded bus service.

There is a significant difference between the costs of the two rail scenarios. This is because the half-hourly service in the second scenario mandates installation of a rail signal system, expansion of the rail yard, and acquisition of more trains. The half-hourly scenario also entails more operating costs.

The Rail Alternative costs include cost estimates for all of the stations, based on a very basic level of conceptual design. There could be large variations in the station costs, if the Rail Alternative were refined. The number of stations could also change. The other rail costs are also based on preliminary assessments of infrastructure needs and contain a 35% contingency to reflect the level of risk and uncertainty in estimating at this phase.

The many elements included in these alternatives have varying life spans. It is difficult to compare costs among them and consider the difference in useful life between a bus and a diesel locomotive, for example. For this reason, the capital costs for the alternatives were annualized, to take into account the varying useful lives of vehicles and infrastructure, and to provide a fair basis for comparison of costs. For this life-cycle costing analysis, an approach was used which is based on the federal methodology for evaluating the costs of New Starts transit projects. As required in that approach, a discount rate of 7% was used for all alternatives. Table 6-10 shows the annualized cost of each alternative, as derived through this life-cycle costing evaluation.

Table 6-10 - Annualized Capital and Operating Costs

Cost Type	No-Build	TSM	Bus	Hwy	Rail 1 Hour	Rail ½ Hour
Capital	NA	\$211,600	\$653,000	\$4,886,400	\$2,229,300	\$5,619,800
Operating	NA	\$516,865	\$1,447,685	\$488,465	\$1,917,665	\$3,364,465
Total	NA	\$728,465	\$2,753,685	\$5,374,465	\$4,146,965	\$11,136,385

The Federal Transit Administration has developed an approach for evaluating transit projects based on the “incremental cost per incremental passenger”, or what is generally known as the “cost per new rider”. Using this approach and the preliminary cost estimates developed at this stage of the project, a rough cost per new rider was developed for the Bus Alternative and both rail scenarios. These costs are based on very preliminary cost estimates, and would need to be refined as work progresses on the project. At this level of development, the costs are all within the range for projects recommended by the Federal Transit Administration for funding under the New Starts program in 2000.

The FTA evaluation approach is not easily transferable to highway projects. New riders are not automatically transferable to new auto trips. For example, countywide projections done for this project indicated there would be fewer auto trips under the Highway Alternative than under the No-Build Alternative. It is also more difficult to identify existing systemwide operating costs, a key component of the evaluation, for the roadway network that is maintained by multiple entities, than the transit system that is operated by one or two operators. In an effort to evaluate the cost-effectiveness of all alternatives, including the Highway Alternative, another approach was used. A standard benefit/cost analysis was done, using the reduction on vehicle hours of delay as the benefit factor. The benefit in reduced hours of delay was divided by the annualized investment. Delay projections were not available for the TSM Alternative. The Highway Alternative was the only alternative to achieve a positive benefit/cost ratio with this analysis, because it is the only alternative to achieve a significant reduction in hours of delay. It is important to bear in mind that the benefits of transportation improvements reach far beyond just a reduction in travel delay, and many are difficult to quantify, so the utility of this form of evaluation is limited. It has been used as one measure among many.

6.4 Advantages and Disadvantages of the Alternatives

6.4.1 No-Build

The No-Build Alternative, although used as a base against which to compare the others, is also a viable approach for transportation investment. The No-Build Alternative, when compared to the 2000 base condition, presents a picture of transportation performance in the region in which population and traffic volumes escalate, congestion increases, and travel speeds drop. Transportation mode choice is limited to the current choices for county residents and for residents of the corridor. Transportation investment is limited to maintenance, with the exception of those investments programmed in the current Transportation Improvement Program.

This approach has the advantage of the savings in transportation capital and operating funds realized by not investing. However, the quality of life consequences would be negative and serious. See Table 6-11.

Table 6-11 - Advantages and Disadvantages - No-Build Alternative

Advantages	Disadvantages
<ul style="list-style-type: none"> • No additional capital or operating costs 	<ul style="list-style-type: none"> • Deteriorating travel conditions • Limited transportation choices • Decline in quality of life

6.4.2 Transportation Systems Management

The TSM Alternative improves transportation operations in the Burlington-Essex corridor. While this alternative does not reduce traffic volumes or congestion, it does permit them to be managed more effectively in the corridor. Under this alternative, all intersections along VT 15, with the exception of Five Corners, will operate at an acceptable level of service. The alternative also increases transportation options in the corridor through expanded bus service. The alternative also has low capital and operating costs.

The disadvantage of the TSM Alternative is that its improvements are localized and do not impact the county or areas beyond the immediate range of the improvements. The alternative makes no contribution to regional connectivity or regional transportation operations. See Table 6-12.

Table 6-12 - Advantages and Disadvantages - Transportation Systems Management Alternative

Advantages	Disadvantages
<ul style="list-style-type: none"> • Low cost • Brings most intersections to acceptable level of service • Increases transportation options 	<ul style="list-style-type: none"> • Impact limited to corridor • Five Corners operations remain unacceptable

6.4.3 Highway

The Highway Alternative has a mix of benefits and costs. Countywide transportation performance improves with this alternative. Corridor-level operations improve slightly, but operations on VT 15 are not improved by the alternative. Significant capacity is added in the corridor and the region, through the Circumferential Highway segments included in the alternative. That facility also contributes to regional connectivity.

The Highway Alternative is projected to increase vehicle miles traveled in the corridor and countywide, through the longer trips induced by the Circumferential Highway. Traffic operations at certain locations within the corridor would be negatively affected, most notably Five Corners, where traffic volumes would increase in peak hours. The Highway Alternative, because it entails construction of infrastructure on land currently being used for other purposes, much of it undeveloped, has the potential for serious environmental impacts. Construction of a major transportation facility far from existing nodes of development is likely to work against growth center-based development. The alternative also has the highest capital costs of all of the alternatives studied. See Table 6-13.

Table 6-13 - Advantages and Disadvantages - Highway Alternative

Advantages	Disadvantages
<ul style="list-style-type: none"> • Improves transportation connections in corridor • Additional highway capacity • Reduces congestion and delay • Circumferential Highway enhances regional connectivity • Little increase in operating costs 	<ul style="list-style-type: none"> • Increases VMT • High capital costs • More traffic at Five Corners • No improvement in VT 15 operations • Potential for negative environmental and land use impacts

6.4.4 Commuter Rail

The Commuter Rail adds a new transportation mode to the corridor, expanding transportation options for those living and working in the corridor. The train offers the potential to increase the transportation capacity of the corridor far beyond the capabilities of the other alternatives, which encourage land use compatible with regional goals. The Commuter Rail Alternative increases the potential to connect with regional transportation networks.

The Commuter Rail Alternative has high capital costs associated with either scenario, however the hourly rail scenario reflects operating costs that are essentially the same as those for the current Charlotte-Burlington service, with the added costs being associated with feeder bus service.

The Rail Alternative generates an increase in transit mode share regionally and in the corridor. However, this increase in mode share reflects a small number of actual trips, so that regional and corridor transportation performances are not markedly improved by the alternative. Ridership under either of the rail scenarios is low by national standards for commuter rail. See Table 6-14.

Table 6-14 - Advantages and Disadvantages - Commuter Rail Alternative

Advantages	Disadvantages
<ul style="list-style-type: none"> • Expands transportation options • Increases transit mode share • Increases corridor capacity • Promotes growth center-based land use • Enhances regional and local transportation connectivity • Potential for little change over current operating costs, with expanded service 	<ul style="list-style-type: none"> • High capital costs • Little impact on regional transportation performance • Low ridership by national standards

The two rail scenarios – hourly and half-hourly service – have somewhat different benefits and costs associated with them. The half-hourly scenario entails a significantly higher level of infrastructure improvements, with an associated increase in capital costs, and the potential for construction to take longer than for the hourly scenario. Operating costs are higher, as well. In addition, the more frequent service will result in more conflicts with traffic, and more noise and vibration impacts. However, with the addition of a signal system on the line, operating safety is enhanced.

The higher level of service draws more riders, with a related improvement to transportation performance of the roadway network in the county and in the corridor. The increase in transit riders takes transit mode share to the highest level achieved by any of the alternatives. See Table 6-15.

Table 6-15 - Advantages and Disadvantages - Commuter Rail Hourly and Half-Hourly Service Scenarios

Advantages of Half-Hourly Scenario	Disadvantages of Half-Hourly Scenario
<ul style="list-style-type: none"> • More frequent service • Higher ridership • More complete improvement of infrastructure • Greater capacity • Improved safety • More improvement in regional and corridor transportation performance 	<ul style="list-style-type: none"> • High capital and operating costs • More noise and traffic impacts • Cost increase outstrips ridership increase • Potential to take longer to implement

6.4.5 Express Bus

The Express Bus Alternative enhances bus service in the corridor, with a slight increase in ridership and transit mode share. The alternative also extends the catchment area for bus service beyond current boundaries to increase transportation options for travel in the corridor.

The Express Bus Alternative has little impact on transportation performance at the county or the corridor level, due to the small change in ridership projected. This is somewhat a vicious circle, as the ridership is also a function of the slow operating conditions on VT 15 through the corridor.

The Express Bus Alternative has the advantage of flexibility, as bus routes can be adjusted to serve changing development patterns, as investments in highways and rail facilities cannot. However, this flexibility is one factor contributing to the fact that investment in bus service on existing roads has little impact in shaping land use, either positively or negatively. See Table 6-16.

Table 6-16 - Advantages and Disadvantages - Express Bus Alternative

Advantages	Disadvantages
<ul style="list-style-type: none"> • Expands mode options • Improves bus service in corridor • Flexibility to adjust service to changing conditions • Increases transit mode share 	<ul style="list-style-type: none"> • Little impact on transportation performance • Little impact on transportation connectivity